

DIY Paddle Shift Steering Wheel Conversion for Tiptronic 987.1 Cayman S

Intro:

First, I must say, this is NOT my original idea. I had been looking for months for an 'off the shelf' paddle shift wheel that could integrate with my 2006 987.1 Cayman S. I couldn't find anything available!

After searching a few forums, I stumbled upon a simple but very clever idea for a DIY paddle shift conversion. I'll borrow heavily from those sources for this write up, as they have done a good job documenting MOST of the issues. The exception being how to integrate with a 'multi-function' wheel, which I will explain

Original Sources:

- <http://rennlist.com/forums/987-981-718-forum/898104-diy-tiptronic-paddle-shift-conversion.html>
- <http://www.6speedonline.com/forums/tech-how/194911-diy-997-series-porsche-911s-8.html#PhotoSwipe1474125496285>

Tools needed:

- T55 torx for steering wheel bolt
- T20 torx to remove steering wheel trim panels
- Long 4mm Allen wrench to pop airbag out of old steering wheel
- 4mm Allen for the bolts to secure the paddles to the wheel
- Soldering iron and solder
- Craft knife
- Drill (and several 3-6mm bits)
- M4x.7 tap to create a thread in the paddle shifters

Consumables and parts:

- Manual Transmission 'multifunction' Porsche steering wheel (\$150-\$700 on ebay)
- Mercedes AMG paddle shifters, part number: A171 267 00 46 (approx. \$130)
- 2 M4 bolts with 0.7 pitch
- Black coloured 'Blu Tack' for filling in gaps



Note: It is NOT necessary to purchase an additional steering wheel. I did so because I wanted to keep my original wheel intact should I ever want to revert (which I now know I NEVER will!!)

For a normal Tiptronic wheel you have a few alternate options if you reuse your existing wheel:

- 1) Leave the tip switches active and have both tip & paddle
- 2) Disable the tip switches but leave them in place
- 3) Replace the tip switch assy with the 'manual' multifunction switch assy (997.613.434.03 & 997.613.433.03)

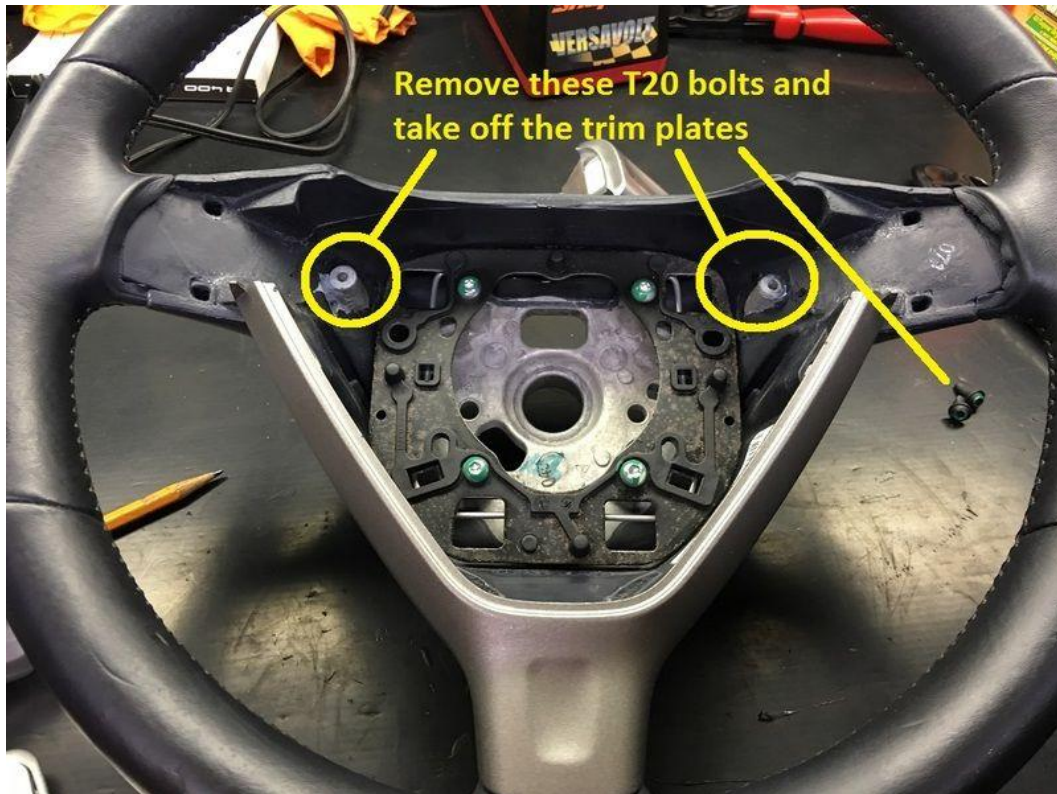


Step 1 - Prep

Remove Steering wheel:

<http://www.6speedonline.com/forums/attachment.php?attachmentid=132417&d=1283880001>

Remove the 2 plastic trim panels from the new wheel using a T20 torx. (They are already removed in this pic below, for clarity)



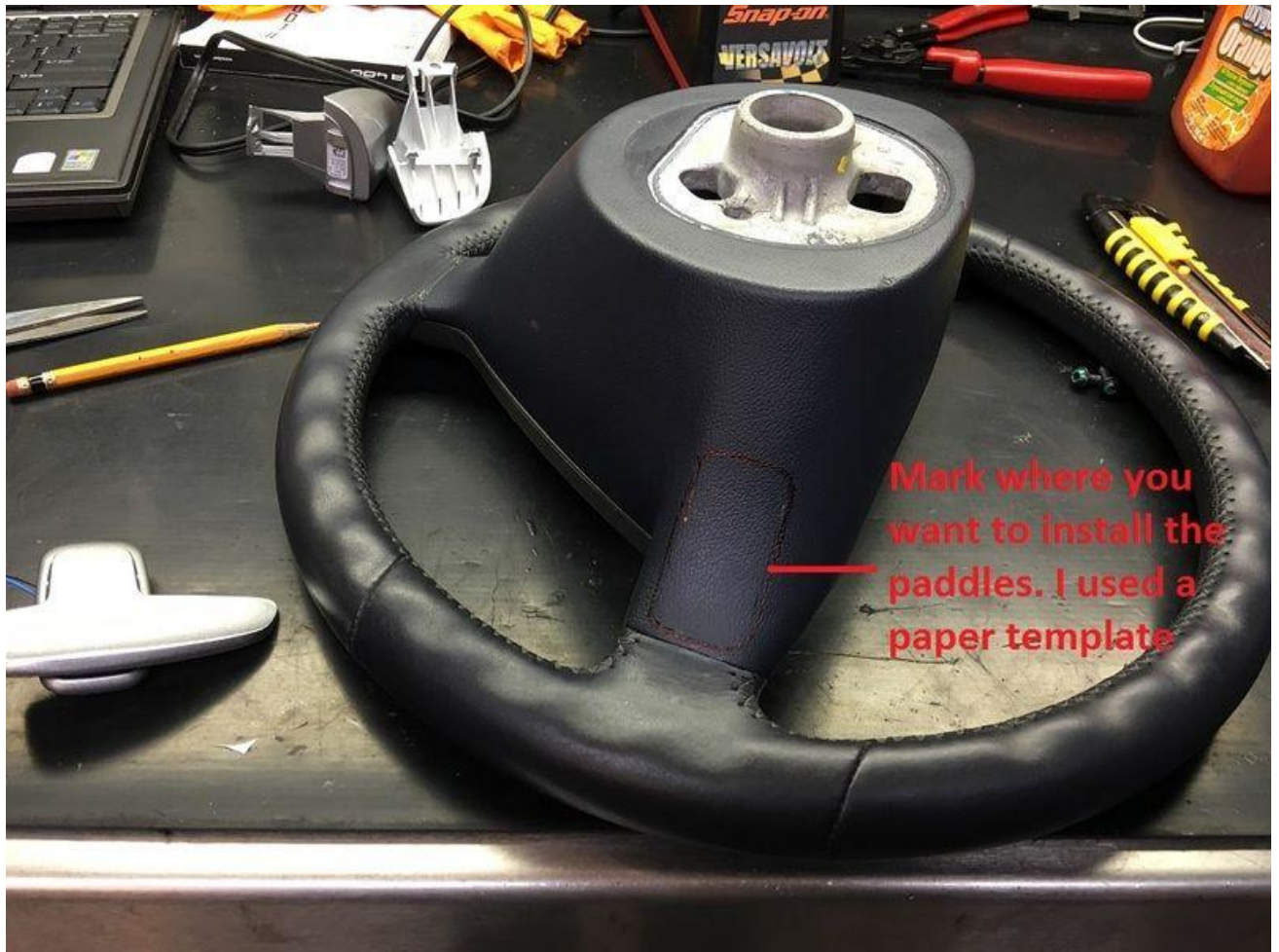
Spend a fair amount of time deciding precisely where you want the paddle shifters to be located. I am very pleased with the location of mine, which are easily reached by my finger tips without stretching or holding the wheel unnaturally).



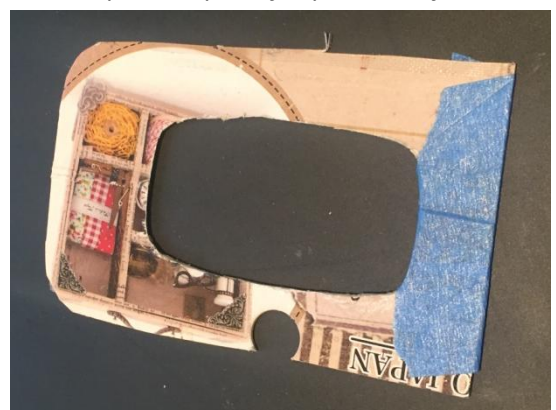
When you are satisfied, create a paper template of the base of the paddle shifter. Note the paddle has a larger section trim piece which should cover the edges of the hole you cut into the wheel.

Step 2- Cutting

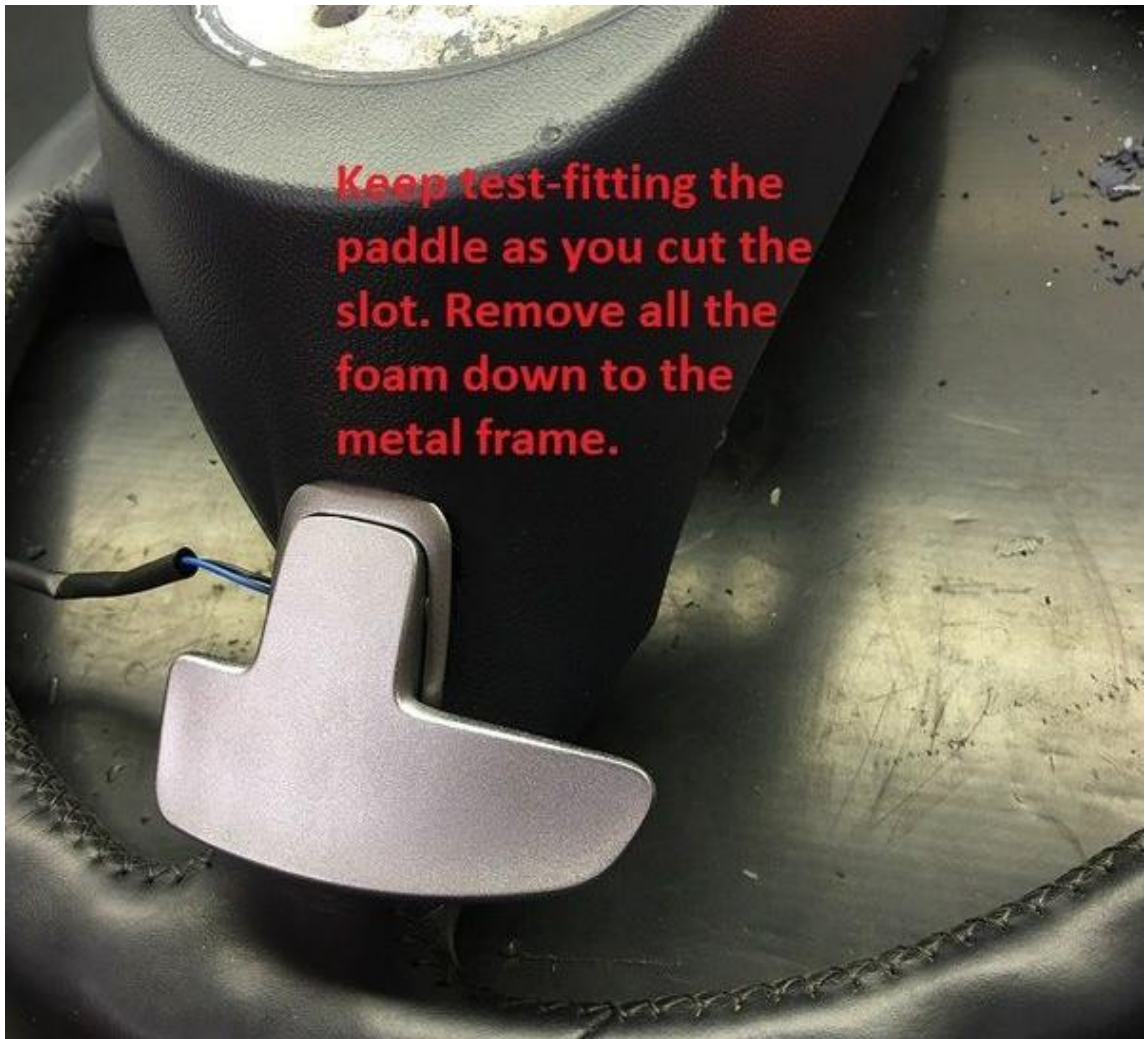
Using a simple cardboard/paper template, mark the edge carefully with a marker pen and cut it out with a craft knife, all the way down to the metal



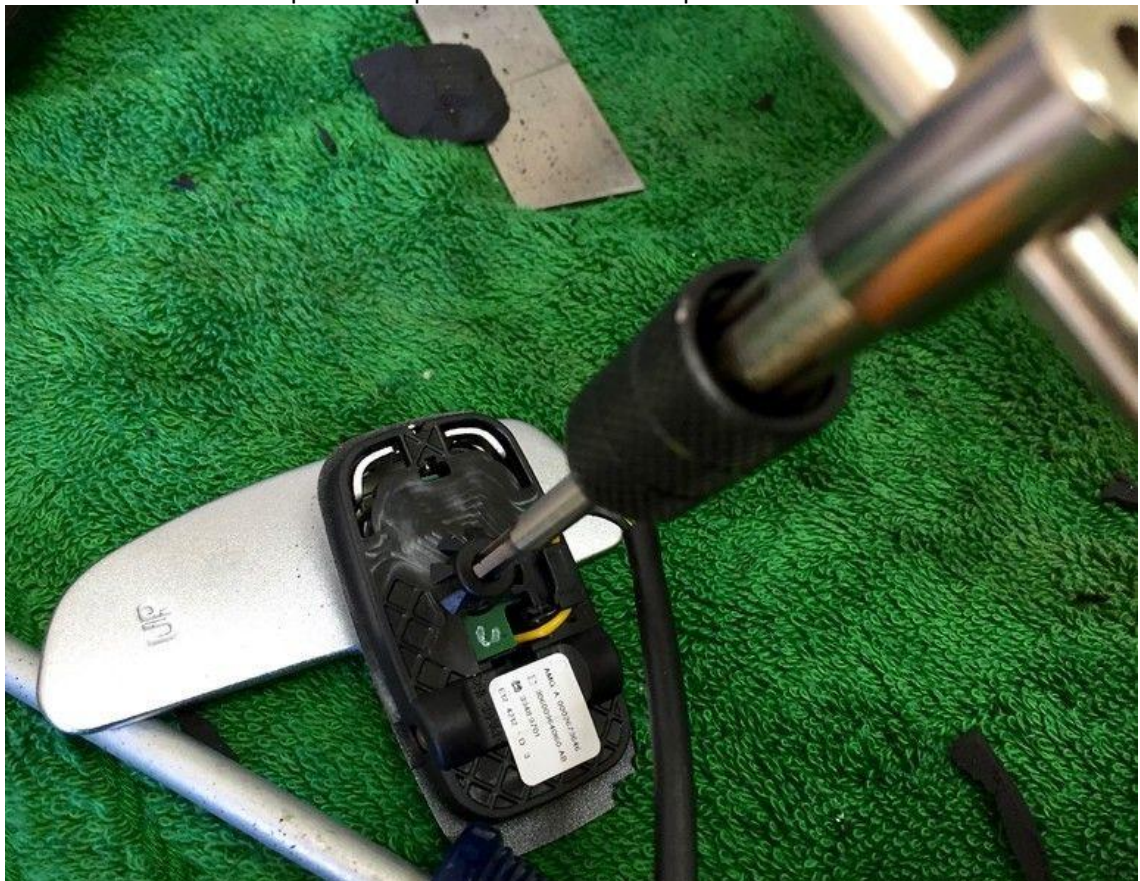
Paper Template for paddle shifter



Keep test fitting the paddles as you cut to make sure your hole is not too large that the trim doesn't cover it.



Tap holes of paddle shifters to accept the M4 bolts.

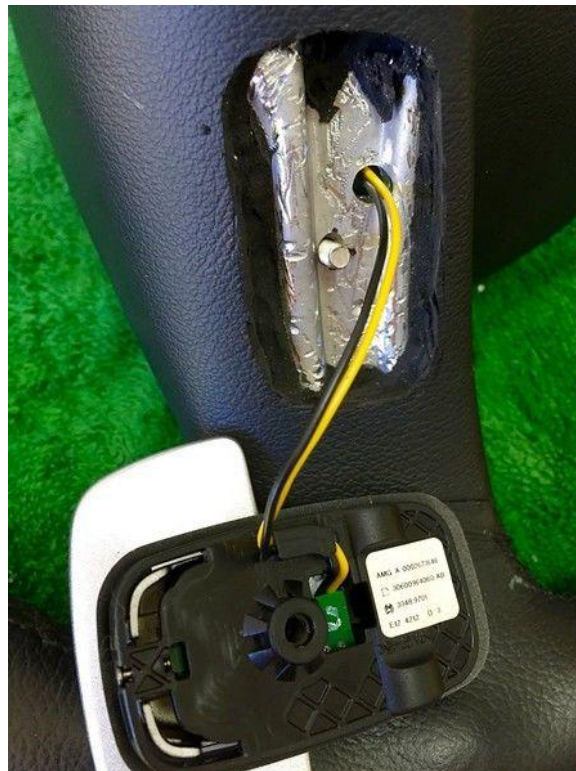


Step 3 – Install

When you are satisfied with the final fit of the paddles, drill 2 holes, the first one is for the mounting bolt (the other for the paddle shift wiring). You will need to carefully mark the location of the hole for the bolt.



There is a fair amount of flexibility where you drill the wiring hole. Make sure you remove (deburr) any rough edges on the wiring hole. I used the wire sheathing here to protect the wires from chafing in the hole.



Feed the wiring through the wiring hole and mount the paddle in place. Bolt it in place using the M4 bolt from the inside of the wheel.

Make sure that the paddle shifters operate correctly by connecting a multimeter across the wires and check that operating the paddle creates a short circuit (7 ohms or less).

Feed the wiring through the lower, smaller hole in the trim panel and bolt it back in place using the T20 torx bolt.

Step 4 - Wiring

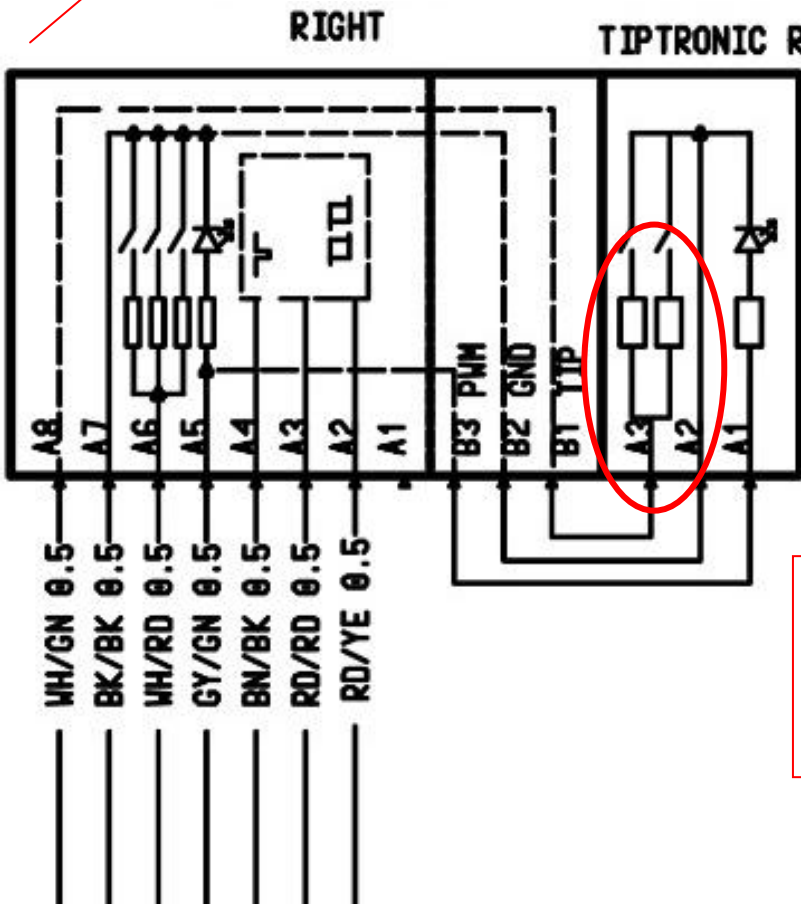
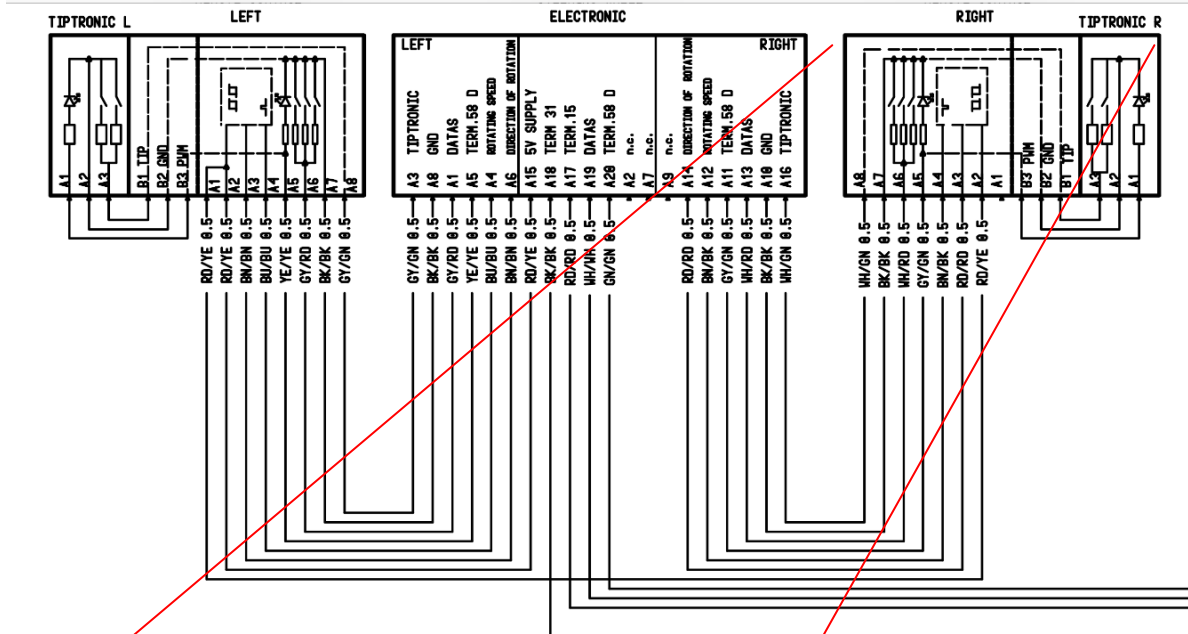
Wiring for a multifunction wheel is a bit more complicated than for a 'non' multifunction wheel. But not to worry, it isn't that difficult once you know what to do.

Parts:

(2) Resistors

- 270 ohm for the +/Up paddle
- 135 ohm for the -/Down paddle

To understand the wiring, we need to look at the schematic for the multi function/tip switches

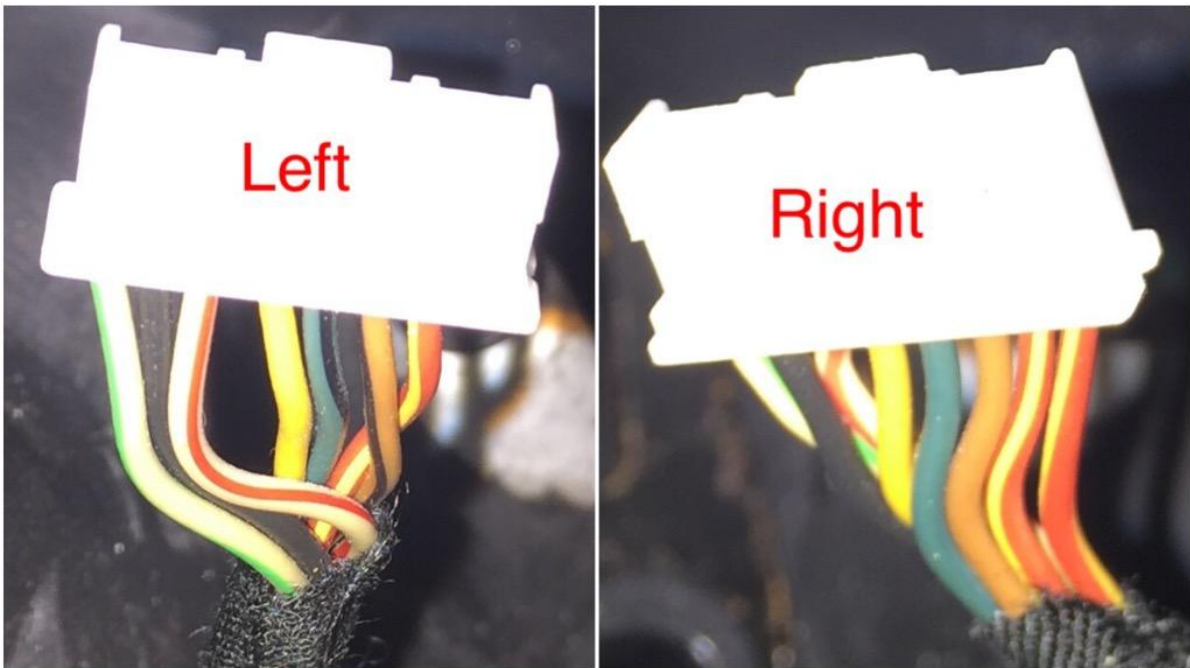


A3 - 270 Ohm Resistor for (+)

A2 - 135 Ohm Resistor for (-)

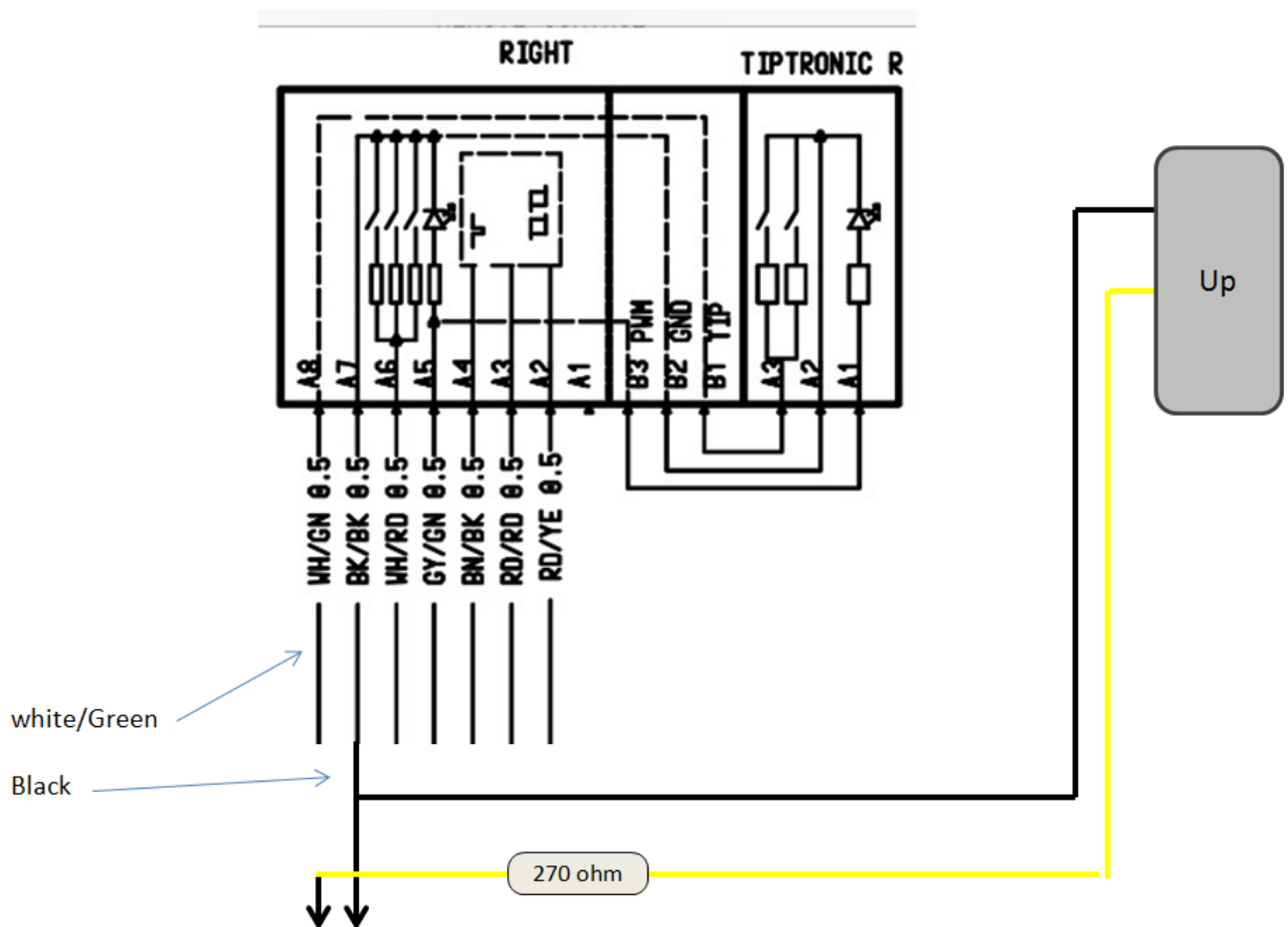
(If unable to find 135 Ohm, 150 Ohm is ok)

We then need to look at the wires of the connectors going into the multi function switches



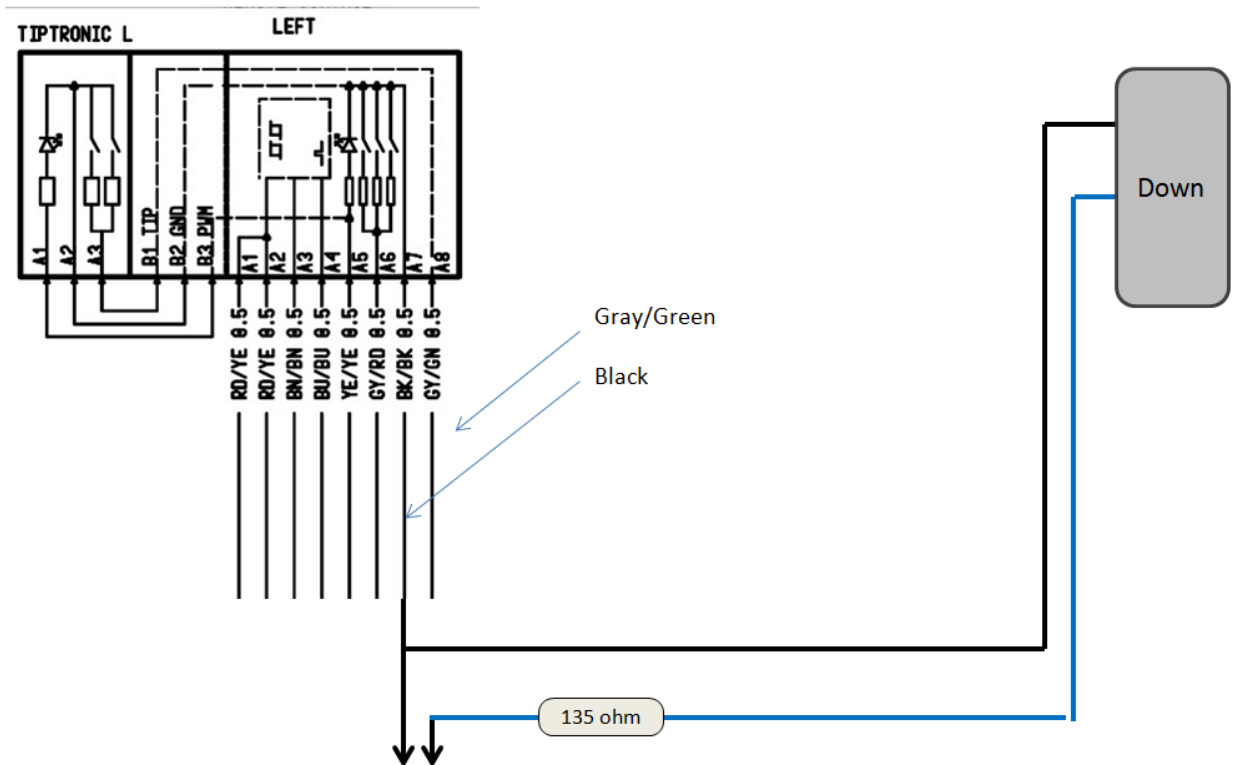
For the Up/+ Paddle, we'll work on the right connector.

- 1) Clip the White/Green wire
- 2) Solder the yellow wire from the up paddle to the white/green wire and seal with shrink wrap
- 3) Strip a small section of the black wire (DO NOT CUT)
- 4) Solder the black wire from the paddle to the 270 ohm resistor and solder that the black wire of connector and seal with electrical tape



For the Down/- Paddle, we'll work on the left connector.

- 1) Clip the Gray/Green wire
- 2) Solder the blue wire from the down paddle to the 135 ohm resistor and solder that to the gray/green wire and seal with shrink wrap
- 3) Strip a small section of the black wire (DO NOT CUT)
- 4) Solder the black wire from the paddle to the black wire of connector and seal with electrical tape



NOTE: If you want to keep the Tiptronic Function in addition to the paddle function, do not clip the gray/green and white/green wires. Instead just strip a small section and splice in the blue and yellow paddle wires accordingly.

Step 4 – Final Touches



As the back of the steering wheel is no flat, there is some gap between the steering wheel body and paddle shifter



This is purely a cosmetic issue and has no impact on functionality. It is also 'behind' the steering wheel and is not obvious unless you REALLY look for it.

Nevertheless, I wanted to make that look a bit more polished. So I used a wonderful product, Blu Tack Black.

I took a small bead of the Black Tack and rolled it into the approximate shape of the gap. I pressed it in with my finger in smoothed it until it was a nice flush fit.

The Blu Tack will remain 'tacky' for some time but cures to a 'reasonable' rubber like hardness in a couple of days.

